

ABSTRACT

The invention is a process and reactors designs for simultaneous ultraviolet light/ultrasound(UV/US) treatment of halogenated organic compounds contaminants in water. The reactors are preferably circular cylindrical reaction vessels that accept a central ultrasonic horn. UV light is provided by lamps placed generally parallel to the reactor walls. Or, UV light may be centrally provided in an immersion well near the ultrasonic horn. Also, preferably a hollow metal partition with a reactant flow-through hole is placed in the reactor between the UV light source and the ultrasonic horn. This way, simultaneous UV/US energy may be effectively provided to the reactors for the remediation of toxic compounds in the water in the reactors. Also, this way, compact and portable reactors may be constructed to permit mobile applications of the UV/US processes.